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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/582,342 09/18/00 BRANDS

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EXAMINER

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LI, B

ART UNIT

PAPER NUMBER

1648

*6*

DATE MAILED:

02/12/01

Please find below and/or attached an Office communication concerning this application or proceeding.

**Commissioner of Patents and Trademarks**

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/582,342	BRANDS, RUDI
	Examiner Bao Qun Li	Art Unit 1648

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 08 November 2000.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,2 and 7-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2 and 7-25 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- |  |  |
|--|--|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                         | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1 | 20) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

The preliminary amendment is acknowledged. The claims 3-6 are canceled, claims 1 and 2 are amended and new claims 7-25 are added. Therefore, claims 1-2 and 7-25 are pending before the examiner.

### *Specification*

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2 and 7-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is vague and indefinite in that the “a repeated discontinuous process” is very confusing. If the process is a repeated one, what does the discontinuous process mean? The repopulating of a cell line is a process that usually directed to pass the 10% or 5% of the small proportion of confluent cells from one tissue culture advice to another new tissue culture advice and use the remaining 80 or 90% of the harvested cell for doing the experiment or production purpose. The procedure continues to repeat until the cells loose their biological characteristics of the parental phenotype. The claim is interpreted in the light of the specification, however, the specification is deficient for teaching what the “repeated discontinuous process” is. Please clarify which process is a repeated discontinuous one.

Claim 1 is vague and indefinite in that the metes and the bonds of the cells are not defined. The claim is interpreted in the light of the specification, however, there are so many type of cells are in the art. Is bacterial cell intended? The claim should point out what type of cell is referred in the said claim. This effect the dependent claims 2, 7-25.

The claim 1 is also unclear and indefinite in that the metes and bonds of the biological are not defined. The claim is interpreted in the light of the specification, however, there are so many kinds of biological molecules are in the art. Is antibody a biological, or is CO<sub>2</sub>? a biological molecule? The claim should point out what kind of the biological is referred in the said claim. This effect the dependent claims 2, 7-25.

Further, the claim 1 is vague and indefinite in that the metes and bonds of "a desired cell volume" are not defined. The term "desired" in the claim is a relative term and the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Is 100 ml a desired volume or 1000 ml a desired volume. This effects the dependent claims 2, 7-25 too.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: how to set up the scale and the apparatus for the initial cell culture, how to transfer and expend the cell culture in preproduction phase, the step and control strategy for maintaining the micro-environment of the cell culture, such as pH, Oxygen, CO<sub>2</sub>, cell viability etc, how to induction of the biological molecule and harvesting the biological etc.

Claim 11 is unclear and confusing in that the metes and bonds of a substance are not defined. The claim is interpreted in the light of the specification, however, there are so many kinds of substance that can support the cell to grow, the claim should point out what kind of substance is referred in the said claim. This effects the dependent claims 12-18.

Claim 14 is vague and indefinite in that the metes and bonds of the carrier are not defined. The claim is interpreted in the light of the specification, however, there are so many kinds of carrier that can embed the cell to grow, the claim should point out what kind of carrier is referred in the said claim. This effects the dependent claims 16-18.

Claim 19 is vague and indefinite in that the metes and bonds of a virus are not defined. The claim is interpreted in the light of the specification, however, the specification is rather deficient in teaching what virus is intended the said claim. Since there are so many kinds of virus in the art, the claim should point out which kind of virus is intended in the said claim.

Claim 20 is vague and indefinite in that the metes and bonds of the protein are not defined. The claim is interpreted in the light of the specification, however, the specification is rather deficient in teaching what protein is intended the said claim. Since there are so many kinds of protein in the art, the claim should point out which kind of protein is intended in the said claim.

Claim 21 is vague and indefinite in that the metes and bonds of the enzyme are not defined. The claim is interpreted in the light of the specification, however, the specification is rather deficient in teaching what enzyme is intended the said claim. Since there are so many kinds of enzyme in the art, the claim should point out which kind of enzyme is intended in the said claim.

Claim 24 is vague and indefinite in that the metes and bonds of the “raising temperature” are not defined. The claim is interpreted in the light of the specification, however, the specification is rather deficient in teaching what “the raising temperature” is referred in the said claim. The claim should point out what the precise range of “raising temperature” is intended in the said claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 9-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Griffiths et al. (Scale-Up of Suspension and Anchorage-dependent Animal Cells in Basic Cell Culture protocols, Edited by Pollard et al. Humana Press Inc, 1997, pp. 59-75).

Griffiths et al. taught several methods for scale-up of an anchorage-dependent animal cells culture for producing the biological molecules such as vaccine, antibody, interferon, tissue plasminogen activator, erythropoietin as well as some hormones or blood factors (pp. 59, 1<sup>st</sup> paragraph lines 1-9), wherein the ancorange-dependent cells can be CHC cells (pp. 59, 1<sup>st</sup> paragraph, lines 1-18), the substance used as a solid support in suspension is Hollow-fiber

cartridges (pp. 63-65, sections 3.1.3.2.) or Cytodex 3 microcarrier at 3-15 g/L (pp. 67-71, section 3.2.1.3. and 3.2.2) for the large-scale (100-500 L) culture operation (pp. 60, lines 3-13). Griffths et al. also taught that attached cells can be released by first washing the cells with PBS and then treating with trypsin/EDTA (pp. 67, step 6 and pp. 71, step 7) before transfer the cell to the next step. In addition, Griffths et al. taught that during the second step of the scale-up culture, the cell density/unit volume increase 10-100 time, in another word, at the beginning of the culture, the cell population is only 10% of the final volume of the culture (pp. 60, lines 2-5). Therefor, the cited reference is inherent by the claimed invention.

Claims 1-2, 9, 11-14, 22, and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis et al. (Hollow-Fiber Cell Culture in Basic Cell Culture protocols, Edited by Pollard et al. Humana Press Inc, 1997, pp. 77-89).

Davis et al. taught a system of Hollow-Fiber cell culture, wherein the cells can be encourage-dependent cells and the starting population of the cells ( $2 \times 10^6$ /ml) is 10-20% of final concentration of the cells ( $8 \times 10^6$ /ml to  $2 \times 10^8$ /ml) (pp. 83-84, section 3.3). Davis et al. also taught that the said cultured cells can be frozen according to standard procedure in the art and be used by next time (pp. 87, step 10). Therefore, the cited referenced is inherent by the claimed invention.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 7-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culver et al. (WO 92/10564), Wikto et al. (US 46/649,12), Pollard (Basic Cell Culture in Basic Cell Culture Protocol edited by Pollard et al. Humana Press Inc. 1997, pp. 1-11) and Norrgren et al. (Exp. Cell Res., 1984, Vol. 152, pp. 427-435).

virus or some recombinant protein etc. Hence the claimed invention as a whole is *prima facie* obvious absence unexpected results.

The Claimed invention is routinely practiced and well known to ordinary artisan skill in the art. The applicant having access to the above cited art would not have anticipated any unexpected results as none have been provided

### *Conclusion*

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bao Qun Li whose telephone number is 703-305-1695. The examiner can normally be reached on 8:30 Am to 5:030 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on 703-308-4027. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Bao Qun Li

February 1, 2001

AJS  
J.R. SALIMI  
PRIMARY EXAMINER